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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/349,087
Filing Date: July 08, 1999
Appellant(s): ROBERTS, KIM B.

Kent Daniels
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 08/02/2004.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief. However, the Appellant has indicated a Reel and Frame number of "???/???". Thus it is not clear what these numbers are.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct. However, in the Appellant's claim appendix, it appears as though the Appellant has mistakenly labeled the status of some of the claims. Namely, it appears claims 1, 3, 5-14, 16-19, 21-28 should be labeled -previously presented- since they have not been changed relative to the immediate prior version, except to omit markings that may have been present in the immediate prior version of the claims. Claims 2, 4, 15 and 20 are correct since these are originally filed claims that have not been changed.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct. However, as discussed above, it appears as though there are minor oversight's that need to be corrected regarding the status of the claims recited in the Appellant's claim appendix.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

The rejection of claims 1-28 stand or fall together because appellant's brief does not include a specific statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

(8) Claims Appealed

A substantially correct copy of appealed claims 1-28 appears on pages 10-15 of the Appendix to the appellant's brief. The minor errors are as follows: it appears claims 1, 3, 5-14, 16-19, 21-28 should be labeled -previously presented- since they have not been changed relative to the immediate prior version, except to omit markings that may have been present in the

immediate prior version of the claims. Claims 2, 4, 15 and 20 are correct since these are originally filed claims that have not been changed.

(9) Prior Art of Record

6,047,005	SHERMAN ET AL.	4-2000
5,263,056	URBANSKY	11-1993
4,998,242	UPP	3-1991
5,131,013	CHOI	7-1992
5,663,820	SHIRAGAKI	9-1997

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-28 have been rejected under 35 U.S.C. 103(a). This rejection is set forth in a prior Office Action, mailed on 02/04/2004.

The rejections are hereby presented for clarity and convenience.

Claim Rejections - 35 USC § 103

1. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sherman et al. (USPN 6,047,005), hereafter referred to as Sherman.

Referring to claim 1, Sherman discloses a method for transmitting a continuous digital signal of an arbitrary rate R1 (transmitting a T1 signal known to have a rate of 1.544 Mbps as a

VT1.5 signals (see column 10)) over a synchronous network (the VT1.5 signal is transported over a Synchronous Optical Network (SONET) (see column10)), comprising:

selecting a fixed length container signal of a rate R (the VT1.5 signal transported in a selected SONET frame (see column 10)), where R is higher than said arbitrary rate R1 of said continuous signal (the SONET signal is transported at an OC-3 which is known to be 155.52 Mbps and therefore is greater than the VT1.5 rate of 1.544 Mbps)); and

at a transmit site, adaptively distributing the bits of said continuous signal into valid locations of a frame of said container signal (the VT1.5 data is mapped to SONET frames, thus the T1 data is adaptively distributed (see column 10)) and providing stuff bits into invalid locations (stuffing bits are also included in the SONET frame (see column 10));

wherein said invalid time slots are uniformly dispersed across the frame (the SONET standard regarding the mapping of VT1.5 signals into SONET frames defines stuff bits that are uniformly dispersed).

Sherman does not disclose that the rate R1 is an arbitrary rate. However, It would have been obvious to one skilled in the art at the time of the invention to imple3mt the virtual tributary (VT) mapping method of Sherman using an arbitrary rate rather than just the DS1 rate because doing so would make the system more flexible and versatile. Furthermore, the SONET standard includes mapping a variety of VT groups (namely, VT1.5, VT2,VT3 and VT6), that each accommodate different rates that are lower than R Therefore, It would have been obvious to one skilled in the art at the time of the invention to implement the method of Sherman using the rates associated with the other standardized VT groups because doing so would lower developmental

costs since using the standardized groups will be cheaper than having to implement as entirely new grouping.

Referring to claim 2, Sherman discloses the system discussed above. Furthermore, Sherman discloses that the container signal is a SONET/SDH signal, and said synchronous network is a SONET/SDH network (the VT1.5 is transported in a SONET frame, which inherently is transported over a SONET network (see column 10)).

Referring to claim 3, Sherman discloses the system discussed above. Furthermore, Sherman discloses that the continuous digital signal is also a SONET/SDH signal (the virtual tributary, VT1.5, signal is interleaved into a single synchronous transport signal (STS-1) therefore it is a synchronous tributary (see column 10)).

Referring to claim 4, Sherman discloses the system discussed above. Furthermore, Sherman discloses that the SONET/SDH signal comprises a plurality of transparent tributaries (each VT1.5 signal transported by the SONET frame consists of 24 lower tributaries (each corresponding to a DS0 signal and therefore making up one DS1 signal per VT1.5 signal) (see column 11)).

2. Claims 5, 21-24,26, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sherman in view of Urbansky (USPN 5,263,056), hereafter referred to as Urbansky.

Referring to claim 5, Sherman discloses the system discussed above. Furthermore, Sherman discloses that the stuff bits are fixed stuff bits (the SONET standard defines fixed stuff bits for mapping VT1.5 signals into SONET frames). Sherman does not disclose that the stuff bits comprise adaptive stuff bits. However, Urbansky discloses locations that comprise adaptive

stuff bits (justification locations contain variable stuff bits (see column 1)). It would have been obvious to one skilled in the art at the time of the invention to utilize adaptive stuff bits, as taught in Urbansky, in the system of Sherman, because doing so would provide the SONET frame with more flexibility when transporting the lower rate tributary (i.e. the virtual tributaries can 'float' in the SPE, a method well known in the art). Furthermore, using variable stuff bits allow the system to adapt to other VT groups other than VT1.5, thereby making the system of Sherman more flexible.

Referring to claim 21, Sherman discloses a method for transmitting a continuous digital signal of a rate R1 over a synchronous network comprising: selecting a container signal of a rate R where R is higher than said rate R1 of said continuous signal (transmitting a T1 signal known to have a rate of 1.544 Mbps as a VT1.5 signals in a SONET frame (see column 10)) and adaptively mapping said continuous digital signal into said container signal by assigning from a set of assignable locations in said container signal locations (the VT1.5 data is mapped to locations of a SONET frame, thus the T1 data is adaptively distributed (see figure 4C column 10)).

Sherman does not disclose that the locations include adaptive stuff bits where said set of assignable locations comprises a significant fraction of the locations within said container signal. However, Urbansky discloses locations that comprise adaptive stuff bits (justification locations contain variable stuff bits (see column 1)). It would have been obvious to one skilled in the art at the time of the invention to utilize adaptive stuff bits, as taught in Urbansky, in the system of Sherman, because doing so would provide the SONET frame with more flexibility when transporting the lower rate tributary (i.e. the virtual tributaries can 'float' in the SPE, a method

well known in the art). Furthermore, using variable stuff bits allow the system to adapt to other VT groups other than VT1.5, thereby making the system of Sherman more flexible.
Sherman also does not disclose that the set of assignable locations comprises a significant fraction of the container. However, it would have been obvious to one skilled in the art at the time of the invention to have a significant number of locations, in the SONET frame of Sherman, because doing so would make the system of Sherman more flexible, since more locations can accommodate more adaptive stuff bits and allow for smaller signals to me mapped to the frame.

Referring to claim 22, Sherman discloses the system discussed above. Sherman does not disclose that the location and the number of stuff bits assigned depend on the phase of said continuous digital signal. However, it would have been obvious to one skilled in the art at the time of the invention to vary the locations and number of stuff bits in the system of Sherman because doing so would allow the system to map signals of different phases, thus making the system of Sherman more flexible.

Referring to claim 23, Sherman discloses the system discussed above. Furthermore, Sherman discloses that the step of adaptively mapping comprises assigning a definite number of locations as fixed stuff bits within a frame of said container signal (the SONET standard defines a number of fixed stuff bits to be included when mapping the VT1.5 signal into the SONET frame)). Sherman does not disclose adjustable the number of locations as said locations to include adaptive stuff bits within said frame. However, it would have been obvious to one skilled in the art at the time of the invention to adjust the number of locations of adaptive stuff bits in the system of Sherman because doing so would allow the system to map signals of different phases, thus making the system of Sherman more flexible.

Referring to claim 24, Sherman discloses the system discussed above. Furthermore, Sherman discloses that the step of adding comprises: partitioning said frame into a number of equally sized data blocks and said definite number of locations (according to the SONET standard, the SONET frame is partitioned into 810 locations) and for each block, determining a control function B indicative of said adjustable number (inherently data put into the 810 bytes of the frame are under some kind of control function) and mapping data bits and said stuff bits within the block based on said control function (stuff bits are inherently mapped according to some control function).

Referring to claims 26 and 27, Sherman discloses the system discussed above. Sherman does not disclose recovering said continuous signal from said synchronous signal at a receive site, by extracting the data bits of said continuous signal from said frame. However, It would have been obvious to one skilled in the art at the time of the invention to recover the VT1.5 signal at a receiver since doing so would allow for communication to take place.

Referring to claim 28, Sherman discloses the system discussed above. Furthermore, Sherman discloses that the continuous signal is a SONET/SDH signal, said container signal is a SONET/SDH signal, and said synchronous network is a SONET/SDH network (the VT1.5 is transported in a SONET frame, which inherently is transported over a SONET network (see column 10)).

3. Claims 6-10, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Sherman in view of Urbansky and further in view of Upp (USPN 4,998,242), hereafter referred to as Upp.

Referring to claim 6, Sherman discloses the system discussed above. Furthermore, Sherman discloses adaptively adding to the bits of to said continuous digital signal including a definite number of locations for accommodating said fixed stuff bits within said frame (according to the SONET specification regarding mapping VT1.5 into frames, a definite number of locations is used for the fixed stuff bits).

Sherman does not disclose determining the phase difference between said continuous digital signal and said container signal and an adjustable number of locations for accommodating said adaptive stuff bits within said frame; based on said phase difference. However, Upp discloses a system wherein the phase difference between a VT group and the SONET output bus is obtained. It would have been obvious to one skilled in the art at the time of the invention to detect the phase difference between the VT signal and the SONET frame so that the VT pointers can be correctly generated.

Referring to claim 7, Sherman discloses the system discussed above. Sherman does not disclose that the adjustable number is significantly larger than said definite number. However, it would have been obvious to one skilled in the art at the time of the invention to have more adjustable locations than definite locations, in the system of Sherman, because doing so would make the system of Sherman more flexible, since more locations can accommodate more stuff bits and smaller payloads can be carried.

Referring to claim 8, Sherman discloses the system discussed above. Sherman does not disclose that the definite number includes transport overhead (TOH) locations and remainder fixed stuff bits locations. However, it would have been obvious to one skilled in the art at the

time of the invention to include TOH in the definite number of locations since the TOH is fixed and does not use up payload space of the SONET frame.

Referring to claim 9, Sherman discloses the system discussed above. Furthermore, Sherman discloses providing maintenance, operation, administration and provisioning information in said TOH locations (the SONET standard defined the TOH as having operation, administration and provisioning information called OA&M).

Referring to claim 10, Sherman discloses the system discussed above. Furthermore, Sherman discloses that the step of adaptively adding comprises: partitioning said frame into a number of equally sized data blocks and said definite number of locations; for each block (the SONET standard defines a sonnet frame as having a definite number or byte partitions, namely, 810), Sherman does not disclose determining a control function B indicative of said adjustable number and adding said adaptive stuff bits based on said control function (adaptive stuff bits if implemented in Sherman would inherently be controlled by some function).

4. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sherman in view of Cummings et al. (USPN 6240087), hereafter referred to as Cummings.

Referring to claim 12, Sherman discloses the system discussed above. Sherman does not disclose recovering the continuous signal. Cummings discloses recovering a continuous signal from said synchronous signal at a receive site (a DS1 signal is recovered from a SONET VT1.5 signal (see column 31 lines 30-67)), by extracting the data bits of said continuous signal from said valid timeslots of said frame (the inbound VT1.5 receiver extracts the DS1 signals from the inbound VT1.5 SPEs of the received SONET frames (see column 31 lines 30-67)). It would

have been obvious to one skilled in the art at the time of the invention to utilize a receiver as taught by Cummings in the system of Sherman, because such a receiver provides a method of properly recovering the continuous digital signal (i.e. the original DS1 signal) from the synchronous network (i.e. the SONET frame of the SONET network) so that the data can be further processed by the receiving end, thus allowing for proper communications to take place across the SONET network.

5. Claims 13, 16,17,19 and 20, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Sherman in view of Upp (USPN 4,998,242).

Referring to claim 13, Sherman discloses a synchronizer for mapping a continuous format signal of an arbitrary rate for transport over a synchronous network as a transparent tributary signal (transmitting a DS1 signal known to have a rate of 1.544 Mbps as a VT1.5 signals (see column 10)), comprising:

a data recovery unit for recovering, from said continuous format signal, a stream of data bits and a data clock indicative of said arbitrary rate (the VT1.5 signal transported in a selected SONET frame and thus is recovered and mapped to the SONET frame and inherently has a clock related to it (see column 10);

a mapping unit for extracting said stream of data bits from said receiver buffer unit at a mapping clock rate, and inserting stuff bits and said data bits into said frame at a block clock rate according to said control function B (the VT1.5 signal is mapped into a selected SONET frame (see column 10)). Note, inherently the frame and VT signal have associated clocks and the mapping takes place according to a control function.

Sherman does not disclose that a receiver buffer unit for receiving said stream of data bits, determining a phase difference between said arbitrary rate and the rate of a frame of said tributary, and generating a control function B. However, Upp discloses a system wherein the phase difference between a VT group and the SONET output bus is obtained. It would have been obvious to one skilled in the art at the time of the invention to detect the phase difference between the VT signal and the SONET frame so that the VT pointers can be correctly generated.

Referring to claim 16, Sherman does not explicitly disclose of a block clock gapper, a mapping clock gapper or using these clock gapers to map the VT signal into the SONET frame. However, it would have been obvious to one skilled in the art to implement such items in the system of Sherman in order to properly fill the SONET frame. Also, note the system of Sherman must have some type of clock 'gappers' in order for the VT1.5 signal to be mapped to the frame.

Referring to claim 17, Sherman discloses the system discussed above. Sherman does not disclose a receiver OH FIFO for re-arranging a plurality of transport overhead TOH locations for seamless transport of said frame within said synchronous network. However, it would have been obvious to one skilled in the art to implement such a FIFO since doing so will prevent errors. Namely, if the TOH is not properly re-arranged, error will occur.

Referring to claims 19 and 20, Sherman discloses the same system as discussed above in the rejection of claim 13. Sherman does not explicitly disclose elements of the receiver that receive the transports VT1.5 signal. However, it would have been obvious to one skilled in the art at the time of the invention to implement a receiving side and the elements necessary for stripping down the SONET frame into DS1 data for the destination, because without such

elements, nodes of the system would not be able to communicate properly, thus making the system stagnant.

6. Claims 14 and 15, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Sherman in view of Upp and further in view of Choi (USPN 5,131,013), hereafter referred to as Choi.

Referring to claims 14 and 15, Sherman discloses the system discussed above. Sherman does not disclose that the receiver buffer unit comprises: an elastic store for temporarily storing an amount of data bits of said stream at said data rate clock and providing said data bits to said mapping unit at said block clock rate; a digital PLL for determining the phase difference between said arbitrary rate and said mapping clock and providing said control function B. However, Choi discloses a system wherein VT1.5 signals are processed using elastic storage and digital PLL (see column 1 lines 17-40 and figure 1)). Since these items are commonly used in mapping VT1.5 signals, It would have been obvious to one skilled in the art at the time of the invention to use them in the system of Sherman because doing so would reduce developmental costs, since entirely new methods of storage and phase detection do not have to be developed.

7. Claim 18, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Sherman in view of Upp and further in view of Shiragaki (USPN 5663820), hereafter referred to as Shiragaki.

Referring to claim 18, Sherman discloses the system discussed above. Sherman does not disclose an overhead multiplexer for adding operation, administration, maintenance and

provisioning data into said TOH locations. However, Shiragaki discloses a SONET system wherein an optical mux is used to multiplex an OA&M signal into a SONET frame (see column 1 lines 57-67)). It would have been obvious to one skilled in the art at the time of the invention to multiplex OA&M messages in the frames of Sherman because such messages are important for proper maintenance of the SONET network, thereby making sure the SONET network remains reliable.

(11) Response to Argument

A. Response to arguments regarding the Examiner's interpretation of the claim limitations:

On pages 7 and 8, the main trust of Appellant's arguments revolve around the interpretation of the term 'adaptively'. Appellant argues that Examiner's given definition of the term 'adaptively' does not represent a reasonable interpretation and that the Examiner's definition is not how the term adaptively is used in the art. The Examiner respectfully disagrees. Appellant, *in his argument*, defines the term 'adaptively' as meaning that "...the function dynamically adjusts to changes in some parameter..." Appellant, however, has not provided any evidence to show that this specific definition is the one intended for the term 'adaptively', as used in the claim. The specification does not clearly state that this is the intended definition. In fact, Appellant has indicated on page 8 last paragraph that ***no*** limitations from the specification are being relied upon by the applicant to describe the term 'adaptively'. It is also noted that for a claim term to be *limited* to a particular definition (i.e. the Appellant's definition given above), the specification must *clearly set forth the definition explicitly and with reasonable clarity,*

deliberateness, and precision (see *Teleflex Inc. v. Ficosa North America Corp., 63 USPQ2d 1374, 1381 (Fed. Cir. 2002), Rexnord Corp. v. Laitram Corp., 60 USPQ2d 1851, 1854 (Fed. Cir. 2001*). Furthermore, as described in the MPEP 2111.01, the words of a claim must be given their ***plain meaning*** unless applicant has provided a clear definition in the specification (also see, In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989)). Examiner has previously stated that the term 'adaptively' merely means to 'suitably perform some function'. Support for this interpretation can be found in the ***plain meaning*** definition given in *Merriam Webster's Collegiate Dictionary*, copyright 1998 (note, a copy of this definition have been provided in Appendix I). According to this resource, the term 'adaptively' is a derivative of the term 'adapt' and 'adapt' is defined as "to make fit" and also has synonyms such as adjust, accommodate, conform, reconcile, suit, etc. Another accepted meaning taken from http://www.dictionary.com for 'adapt' is "To make suitable to or fit for a specific use or situation." (see Appendix I for a copy of this definition as well). Clearly, such resources would be readily available to a skilled artisan at the time of the Applicant's invention and as such the Examiner's interpretation of the term is indeed founded, valid and correct. In this case, Sherman discloses the process of making a SONET frame suitable for transmitting a T1 signal, thus it is 'adaptively' distributing the T1 bits into a SONET frame.

B. Response to arguments regarding the 35 U.S.C. 103(a) rejections of claim 1:

On page 9, the Appellant argues that the Sherman reference is improper because it is not directed toward solving the same problems as the present application. The Examiner respectfully disagrees with this argument. It is *not* required that the system described in a reference, which is

relied upon for a 35 USC 103(a) rejection, be used to solve the same problems as the present invention. Furthermore, Appellant argues that the Sherman system does not teach adaptively mapping the signal. The Examiner respectfully disagrees. In Sherman, the system maps T1 signals as Virtual Tributary, VT1.5, into SONET frames. In doing so, Sherman conforms the T1 signal for transport in the SONET frame, thus it is 'adapting' the signal for this transportation. Furthermore, Sherman also adjusts the SONET frame format to accommodate more T1 signals into a frame so they too can be transported to other areas of the network (see the abstract and column 12 lines 43-40). Since Sherman is using SONET frames to suitably transfer T1 signals across a network, this operation is clearly in line with Examiner's interpretation of the term 'adaptively' and as such the rejection is believed to be proper.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

deo
August 23, 2004

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Appendix I

lə-tē, ˌak-shə-ˈ *n, pl* **-ties** (1652) **1** : the quali- **2** : something that is actual : FACT, REALITY e been seized upon as *actualities* —T. S. Eliot) ˌliz, -sh(ə-w)ə-ˌliz\ *vb* **-ized; -iz·ing** *vt* (1701) ZE ~ *vi* : to become actual — **ac·tu·al·iza·** shən, -sh(ə-w)ə-lə-\ *n*

)ə-lē, -sh(ə-w)ə-lē; ˈaksh-lē, ˈaks-\ (15c) **1** : in ominally but not ~ independent —Karl Loe- e for an hour⟩ **2** : in point of fact — used to ected ⟨he could ~ read the Greek⟩

-ē-əl, -shə-\ *adj* (1869) **1** : of or relating to ac- tistical calculation esp. of life expectancy — *dv*

-shə-\ *n, pl* **-ar·ies** [L *actuarius* shorthand r. *actum* record — more at ACT] (1553) **1** *obs* : one who calculates insurance and annuity lividends

ə-\ *vt* **-ät·ed; -at·ing** [ML *actuatus*, pp. of *ac- us* act] (1645) **1** : to put into mechanical ac- ve to action *syn* see MOVE — **ac·tu·a·tion**

ər, -shə-\ *n* (ca. 1864) : one that actuates; e for moving or controlling something in a way different from that which is normal ave in an unruly, recalcitrant, or capricious : to function improperly ⟨this typewriter is ecome active or acute after being quiescent o *act up*⟩

pl **-ities** [MF *acuité*, fr. LL *acuitat-, acuitas*, ness of perception : SHARPNESS

i [L *aculeatus* having stings, fr. *aculeus* sting, o or being hymenopterans (as bees, ants, and ı (Aculeata) typically having the ovipositor

ˌə-mən\ *n* [L *acumin-, acumen*, lit., point, fr. ss and depth of perception, discernment, or tical matters *syn* see DISCERNMENT

t\ *adj* (1646) : tapering to a slender point shər, ˈa-kə-\ *n* (1958) : the application of bs or fingertips) to the same discrete points acupuncture that is used for its therapeutic ion or pain) — compare SHIATSU

ər\ *n* [L *acus* + E *puncture*] (1684) : an orig. ring the body (as with needles) at specific lieve pain (as in surgery) — **acu·punc·tur-**

acut·est [L *acutus*, pp. of *acuere* to sharp- L *acer* sharp — more at EDGE] (14c) **1 a** (1) ss or severity ⟨~ pain⟩ (2) : having a sud- hort course ⟨~ disease⟩ **b** : lasting a short : ending in a sharp point: as **a** : being or g less than 90 degrees ⟨~ angle⟩ **b** : tri- riangle⟩ **3 a** *of an accent mark* : having the acute accent **c** : of the variety indicated by ed by keen discernment or intellectual per- ictions : PENETRATING ⟨an ~ thinker⟩ **b** ssions or stimuli ⟨~ hearing⟩ **5** : felt, per- isely ⟨~ distress⟩ **6** : seriously demanding y *adv* — **acute·ness** *n*

JCIAL mean of uncertain outcome. ACUTE conditions leading to a culmination or ousing shortage⟩. CRITICAL adds to ACUTE change, of attendant suspense, and of deci- he war has entered a *critical* phase⟩. CRU- the ways and often a test or trial involving ture course or direction ⟨a *crucial* vote⟩.

lj (1878) : not cyclic: as **a** : not disposed in g an open-chain structure : ALIPHATIC ⟨an

ı [*a-* + *cycl-* + *virus*] (1979) : a cyclic nucle- o treat the symptoms of the genital form of

ISV, fr. *acid*] (1899) : a radical RCO– de- acid by removal of the hydroxyl from all combination

d; -at·ing (1907) : to introduce an acyl ˌa-sə-ˈlā-shən\ *n*

1 : ADVERTISEMENT **2** : ADVERTISING

***or* ap-** *or* **as-** *or* **at-** *prefix* [ME, fr. MF, OF — more at AT] **1** : to : toward — usu. *ac-* on⟩ and *af-* before *f* ⟨*af*fluent⟩ and *ag-* be- - before *l* ⟨*al*literation⟩ and *ap-* before *p* ⟨*as*suasive⟩ and *at-* before *t* ⟨*at*tune⟩ and sometimes *ad-* even before one of the list- near : adjacent to — in this sense always

] : in the direction of : toward ⟨cephal*ad*⟩ -, *-as*, fr. Gk, suffix denoting descent from r of a botanical group ⟨bromeli*ad*⟩ d for a structured computer programming

agium, fr. *ad-* + *-agium* (akin to *aio* I say): a saying often in metaphorical form that tion

ē-ˌjō\ *adv or adj* [It, fr. *ad* to + *agio* ease] sed chiefly as a direction in music : a musical composition or movement in uet by a man and woman or a mixed trio ılance, lifting, or spinning

-L, fr. Gk, fr. Heb *Ādhām*] **1** : the first in and Abel **2** : the unregenerate nature of man — used esp. in the phrase *the old Adam* — **Adam·ic** \ə-ˈda-mik\ *or* **Adam·i·cal** \-mi-kəl\ *adj*

²Adam *adj* [Robert *Adam* & James *Adam*] (1872) : of, relating to, or being an 18th century decorative style (as of furniture) characterized by straight lines, surface decoration, and conventional designs (as festooned garlands and medallions)

ad·a·mance \ˈa-də-mən(t)s\ *n* (1954) : ADAMANCY

ad·a·man·cy \-mən(t)-sē\ *n* [*²adamant* + *-cy*] (1937) : OBSTINACY

adam–and–eve \ˌa-də-mən-ˈ(d)ēv\ *n* (1807) : PUTTYROOT

¹ad·a·mant \ˈa-də-mənt, -ˌmant\ *n* [ME, fr. MF, fr. L *adamant-, adamas* hardest metal, diamond, fr. Gk] (14c) **1** : a stone (as a diamond) formerly believed to be of impenetrable hardness **2** : an unbreakable or extremely hard substance

²adamant *adj* (1923) : unshakable or immovable esp. in opposition ; UNYIELDING *syn* see INFLEXIBLE — **ad·a·mant·ly** *adv*

ad·a·man·tine \ˌa-də-ˈman-ˌtēn, -ˌtīn, -ˈman-tᵊn\ *adj* [ME, fr. L *adamantinus*, fr. Gk *adamantinos*, fr. *adamant-, adamas*] (13c) **1** : made of or having the quality of adamant **2** : rigidly firm : UNYIELDING **3** : resembling the diamond in hardness or luster

Adam's apple *n* (ca. 1775) : the projection in the front of the neck formed by the largest cartilage of the larynx

Adam's needle *n* (ca. 1760) : an often cultivated yucca (*Yucca filamentosa*) of coastal pine barrens of the eastern U.S. with a basal rosette of sharp-tipped leaves having loose threads along the margins

adapt \ə-ˈdapt, a-\ *vb* [F or L; F *adapter*, fr. L *adaptare*, fr. *ad-* + *aptare* to fit, fr. *aptus* apt, fit] *vt* (15c) : to make fit (as for a specific or new use or situation) often by modification ~ *vi* : to become adapted — **adapt·ed·ness** *n*

syn ADAPT, ADJUST, ACCOMMODATE, CONFORM, RECONCILE mean to bring one thing into correspondence with another. ADAPT implies a modification according to changing circumstances ⟨*adapted* themselves to the warmer climate⟩. ADJUST suggests bringing into a close and exact correspondence or harmony such as exists between parts of a mechanism ⟨*adjusted* the budget to allow for inflation⟩. ACCOMMODATE may suggest yielding or compromising to effect a correspondence ⟨*accommodated* his political beliefs in order to win⟩. CONFORM applies to bringing into accordance with a pattern, example, or principle ⟨refused to *conform* to society's idea of morality⟩. RECONCILE implies the demonstration of the underlying compatibility of things that seem to be incompatible ⟨tried to *reconcile* what they said with what I knew⟩.

adapt·able \ə-ˈdap-tə-bəl, a-\ *adj* (1800) : capable of being adapted : SUITABLE *syn* see PLASTIC — **adapt·abil·i·ty** \-ˌdap-tə-ˈbi-lə-tē\ *n*

ad·ap·ta·tion \ˌa-ˌdap-ˈtā-shən, -dəp-\ *n* (1610) **1** : the act or process of adapting : the state of being adapted **2** : adjustment to environmental conditions: as **a** : adjustment of a sense organ to the intensity or quality of stimulation **b** : modification of an organism or its parts that makes it more fit for existence under the conditions of its environment **3** : something that is adapted; *specif* : a composition rewritten into a new form — **ad·ap·ta·tion·al** \-shnəl, -shə-nᵊl\ *adj* — **ad·ap·ta·tion·al·ly** *adv*

adapt·er *also* **adapt·or** \ə-ˈdap-tər, a-\ *n* (1801) **1** : one that adapts **2 a** : a device for connecting two parts (as of different diameters) of an apparatus **b** : an attachment for adapting apparatus for uses not orig. intended

adap·tion \ə-ˈdap-shən, a-\ *n* (1704) : ADAPTATION

adap·tive \ə-ˈdap-tiv, a-\ *adj* (1824) : showing or having a capacity for or tendency toward adaptation — **adap·tive·ly** *adv* — **adap·tive·ness** *n* — **ad·ap·tiv·i·ty** \ə,a-ˌdap-ˈti-və-tē\ *n*

adaptive radiation *n* (1902) : evolutionary diversification of a generalized ancestral form with production of a number of adaptively specialized forms

Adar \ä-ˈdär, ˈä-\ *n* [ME, fr. Heb *Ādhār*] (14c) : the 6th month of the civil year or the 12th month of the ecclesiastical year in the Jewish calendar — see MONTH table

Adar She·ni \ä-ˌdär-shä-ˈnē\ *n* [Heb *Ādhār Shēnī* second Adar] (ca. 1901) : VEADAR

ad·ax·i·al \(ˌ)a-ˈdak-sē-əl\ *adj* (ca. 1900) : situated on the same side as or facing the axis (as of an organ) ⟨the ~ or upper surface of a leaf⟩

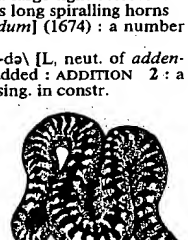
add \ˈad\ *vb* [ME, fr. L *addere*, fr. *ad-* + *-dere* to put — more at DO] *vt* (14c) **1** : to join or unite so as to bring about an increase or improvement ⟨~*s* 60 acres to his land⟩ ⟨wine ~*s* a creative touch to cooking⟩ **2** : to say further : APPEND **3** : to combine (numbers) into an equivalent simple quantity or number **4** : to include as a member of a group ⟨don't forget to ~ me in⟩ ~ *vi* **1 a** : to perform addition **b** : to come together or unite by addition **2 a** : to serve as an addition ⟨the movie will ~ to his fame⟩ **b** : to make an addition ⟨~*ed* to her savings⟩ — **add·able** *or* **add·ible** \ˈa-də-bəl\ *adj*

ad·dax \ˈa-ˌdaks\ *n, pl* **ad·dax·es** [L] (1693) : a large light-colored Saharan antelope (*Addax nasomaculatus*) that has long spiralling horns

ad·dend \ˈa-ˌdend, ə-ˈdend\ *n* [short for *addendum*] (1674) : a number to be added to another

ad·den·dum \ə-ˈden-dəm\ *n, pl* **-den·da** \-ˈden-də\ [L, neut. of *addendus*, gerundive of *addere*] (1684) **1** : a thing added : ADDITION **2** : a supplement to a book — often used in pl. but sing. in constr.

¹ad·der \ˈa-dər\ *n* [ME, alter. (by false division of *a naddre*) of *naddre*, fr. OE *nǣdre;* akin to OHG *nātara* adder, L *natrix* water snake] (14c) **1** : the common venomous viper (*Vipera berus*) of Europe; *broadly* : a terrestrial viper (family Viperidae) **2** : any of several No. American snakes (as the hognose snakes) that are harmless but are popularly believed to be venomous



adder 1

²add·er \ˈa-dər\ *n* (1580) : one that adds; *esp* : a device (as in a computer) that performs addition

ad·der's–tongue \ˈa-dərz-ˌtəŋ\ *n* (1578) **1** : any of a genus (*Ophioglossum*, family Ophioglossaceae) of small ferns having a spore- bearing stalk resembling a serpent's tongue **2** : DOGTOOTH VIOLET

¹ad·dict \ə-ˈdikt\ *vt* [L *addictus*, pp. of *addicere* to favor, fr. *ad-* + *dicere* to say — more at DICTION] (1534) **1** : to devote or surrender (oneself) to something habitually or obsessively ⟨~*ed* to gambling⟩ **2** : to cause addiction to a substance in

²ad·dict \ˈa-(ˌ)dikt\ *n* (1909) **1** : one who is addicted to a substance **2** : DEVOTEE ⟨a detective novel ~⟩

ad·dic·tion \ə-ˈdik-shən, a-\ *n* (1599) **1** : the quality or state of being addicted ⟨~ to reading⟩ **2** : compulsive need for and use of a habit-forming substance (as heroin, nicotine, or alcohol) characterized by tolerance and by well-defined physiological symptoms upon withdrawal; *broadly* : persistent compulsive use of a substance known by the user to be harmful

ad·dic·tive \-ˈdik-tiv\ *adj* (1939) : causing or characterized by addiction

Ad·di·son's disease \ˈa-də-sənz-\ *n* [Thomas *Addison* †1860 Eng. physician] (ca. 1856) : a destructive disease marked by deficient adrenocortical secretion and characterized by extreme weakness, loss of weight, low blood pressure, gastrointestinal disturbances, and brownish pigmentation of the skin and mucous membranes

ad·di·tion \ə-ˈdi-shən, a-\ *n* [ME, fr. MF, fr. L *addition-, additio*, fr. *addere*] (14c) **1** : a part added (as to a building or residential section) **2** : the result of adding : INCREASE **3** : the act or process of adding; *esp* : the operation of combining numbers so as to obtain an equivalent simple quantity **4** : direct chemical combination of substances into a single product — **in addition** : ²BESIDES, ALSO — **in addition to** : combined or associated with : ¹BESIDES 2

ad·di·tion·al \-ˈdish-nəl, -ˈdi-shə-nᵊl\ *adj* (1646) : existing by way of addition : ADDED

ad·di·tion·al·ly \-ˈdish-nə-lē, -ˈdi-shən-lē, ˈdi-shə-nᵊl-ē\ *adv* (ca. 1665) : in or by way of addition : FURTHERMORE

¹ad·di·tive \ˈa-də-tiv\ *adj* (1699) **1** : of, relating to, or characterized by addition **2** : produced by addition **3** : characterized by, being, or producing effects (as drug responses or gene products) that when the causative factors act together are the sum of their individual effects — **ad·di·tive·ly** *adv* — **ad·di·tiv·i·ty** \ˌa-də-ˈti-və-tē\ *n*

²additive *n* (1945) : a substance added to another in relatively small amounts to effect a desired change in properties ⟨food ~*s*⟩

additive identity *n* (1960) : an identity element (as 0 in the group of whole numbers under the operation of addition) that in a given mathematical system leaves unchanged any element to which it is added

additive inverse *n* (1958) : a number that when added to a given number gives zero ⟨the *additive inverse* of 4 is –4⟩ — compare OPPOSITE 3

¹ad·dle \ˈa-dᵊl\ *adj* [ME *adel* filth, fr. OE *adela;* akin to MLG *adele* liquid manure] (1592) **1** *of an egg* : ROTTEN **2** : CONFUSED

²addle *vb* **ad·dled; ad·dling** \ˈad-liŋ, ˈa-dᵊl-iŋ\ *vt* (ca. 1712) : to throw into confusion : CONFOUND ~ *vi* **1** : to become rotten : SPOIL **2** : to become confused

ad·dle·pat·ed \ˈa-dᵊl-ˌpā-təd\ *adj* (1630) **1** : being mixed up : CONFUSED **2** : ECCENTRIC

¹add–on *n* (1946) : something added on: as **a** : a sum or amount added on **b** : something (as an accessory or added feature) that enhances the thing it is added to

²add–on \ˈa-ˌdän, -ˌdȯn\ *adj* (1955) **1** : being or able to be added on **2** : able to be added to ⟨~ certificates of deposit⟩

¹ad·dress \ə-ˈdres, a- *also* ˈa-ˌdres\ *vb* [ME *adressen*, fr. MF *adresser*, fr. *a-* (fr. L *ad-*) + *dresser* to arrange — more at DRESS] *vt* (14c) **1** *archaic* **a** : DIRECT, AIM **b** : to direct to go : SEND **2 a** : to direct the efforts or attention of (oneself) ⟨will ~ himself to the problem⟩ **b** : to deal with : TREAT ⟨intrigued by the chance to ~ important issues —I. L. Horowitz⟩ **3** *archaic* : to make ready; *esp* : DRESS **4 a** : to communicate directly ⟨~*es* his thanks to his host⟩ **b** : to speak or write directly to; *esp* : to deliver a formal speech to **5 a** : to mark directions for delivery on ⟨~ a letter⟩ **b** : to consign to the care of another (as an agent or factor) **6** : to greet by a prescribed form **7** : to adjust the club preparatory to hitting (a golf ball) **8** : to identify (as a peripheral or memory location) by an address or a name for information transfer ~ *vi, obs* : to direct one's speech or attentions — **ad·dress·er** *n*

²ad·dress \ə-ˈdres, *for 5 & 7 & 4 also* ˈa-ˌdres\ *n* (1539) **1** : dutiful and courteous attention esp. in courtship — usu. used in pl. **2 a** : readiness and capability for dealing (as with a person or problem) skillfully and smoothly : ADROITNESS **b** *obs* : a making ready; *also* : a state of preparedness **3 a** : manner of bearing oneself ⟨a man of rude ~⟩ **b** : manner of speaking or singing : DELIVERY **4** : a formal communication; *esp* : a prepared speech delivered to a special audience or on a special occasion **5 a** : a place where a person or organization may be communicated with **b** : directions for delivery on the outside of an object (as a letter or package) **c** : the designation of place of delivery placed between the heading and salutation on a business letter **6** : a preparatory position of the player and club in golf **7** : a location (as in the memory of a computer) where particular information is stored; *also* : the digits that identify such a location *syn* see TACT

ad·dress·able \ə-ˈdre-sə-bəl\ *adj* (1953) **1** : able to be addressed : directly accessible ⟨~ registers in a computer⟩ **2** : of or relating to a subscription television system that uses decoders addressable by the system operator — **ad·dress·abil·i·ty** \ə-ˌdre-sə-ˈbi-lə-tē\ *n*

ad·dress·ee \ˌa-ˌdre-ˈsē, ə-ˌdre-ˈsē\ *n* (1810) : one to whom something is addressed

ad·duce \ə-ˈdüs *also* -ˈdyüs\ *vt* **ad·duced; ad·duc·ing** [L *adducere*, lit., to lead to, fr. *ad-* + *ducere* to lead — more at TOW] (15c) : to offer as example, reason, or proof in discussion or analysis — **ad·duc·er** *n*

¹ad·duct \ə-ˈdəkt, a-\ *vt* [L *adductus*, pp. of *adducere*] (ca. 1839) : to draw (as a limb) toward or past the median axis of the body; *also* : to bring together (similar parts) ⟨~ the fingers⟩ — **ad·duc·tive** \-ˈdək-tiv\ *adj*

²ad·duct \ˈa-ˌdəkt\ *n* [G *Addukt*, fr. L *adductus*] (1941) : a chemical addition product

ad·duc·tion \ə-ˈdək-shən, a-\ *n* (14c) **1** : the action of adducting : the state of being adducted **2** : the act or action of adducing

ad·duc·tor \-ˈdək-tər\ *n* [NL, fr. L, one that draws to, fr. *adductus*] (1615) **1** : a muscle that draws a part toward the median line of the

a·dapt Pronunciation Key (ə-dăpt′)
***v.* a·dapt·ed, a·dapt·ing, a·dapts**
v. tr.

To make suitable to or fit for a specific use or situation.

v. intr.

To become adapted: *a species that has adapted well to winter climes.*

[Middle English adapten, from Latin adaptāre : ad-, *ad-* + aptāre, *to fit* (from aptus, *fitting*. See **apt**).]

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a·dapt′ed·ness *n.*

Synonyms: *adapt, accommodate, adjust, conform, fit, reconcile*
These verbs mean to make suitable to or consistent with a particular situation or use: *adapted themselves to the new requirements; adjusting their behavior to the rules; conforming her life to accord with her m to the crime; couldn't reconcile his reassuring words with his hostile actions.*
Antonyms: *unfit*